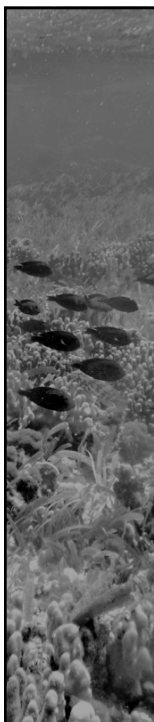


Tension with conservation initiatives

- Non-food species
- Selection programs for species
- Domestication of species
- Working on juveniles and feeds

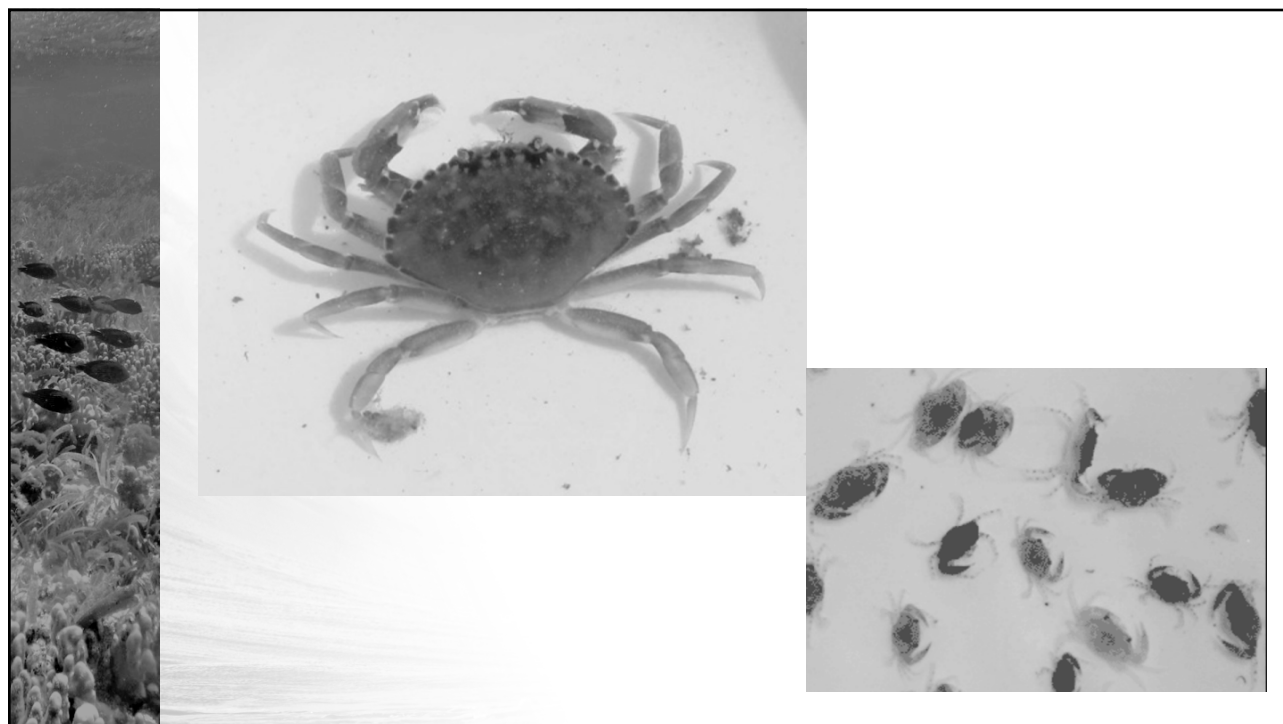
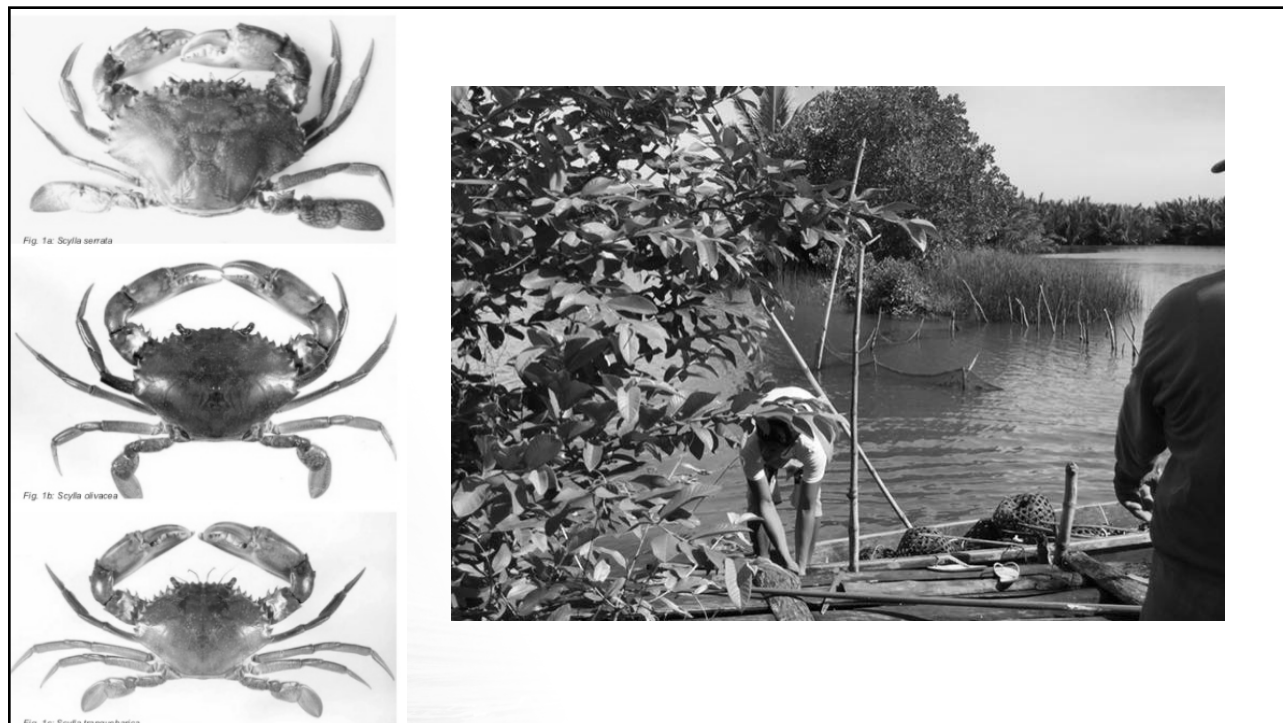


The issue of uncertainty

- Climate change
- Market preferences
- Policy changes and government support
- Unpredictability of biological systems









Giant clams (*Tridacna* sp)

- IUCN status: Vulnerable
- Currently farmed for:
 - ✧ Pearl production
 - ✧ Marine aquarium trade
 - ✧ Food
 - ✧ Shell market
- Several species, including the boring clam *Tridacna crocea*, are good bioindicators and bioaccumulators of heavy metals and other pollutants (Duquesne & Coll 1995).
- Giant clams like other coral associated species are threatened by climate change and increasing surface temperatures

INTEGRATING GENOMICS WITH IMAGE ANALYSIS AND GEOGRAPHIC INFORMATION SYSTEM (GIS) TECHNOLOGY FOR IMPROVED REARING OF MUD CRABS

Dr. Ma. Carmen Aquino-Sigman, Dr. Marlon Rosendo R. Capala, and Francisco Saguma
 Chessa Gamito C. Nolasco, Dan Marlon Nolasco R. Gamito, Rosendo Gamito C. Torres, Chessa C. Saguma Gamito C. Saguma and Rosendo Gamito C. Saguma

CrabAPP
 Identifying species of penaeid and scud based on a captured images validating using DNA sequences

CrabMAP
 Mapping vulnerability of farms and potential farm areas into relevant temperatures from global datasets

CrabMOLT
 Deriving percent of cytoplasmic and hatching molting in mangrove crabs

CrabADAPT
 Determining populations that are naturally adapted to temperatures stress

CrabSNP
 Establishing SNP markers for use in breeding for the intermolecular sea phenotypes

A black and white photograph showing a school of dark, elongated fish swimming in a shallow, sandy environment. The seabed is covered with low-lying, leafy vegetation. The water is clear, and the background shows a gentle slope of the seabed.

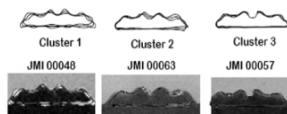
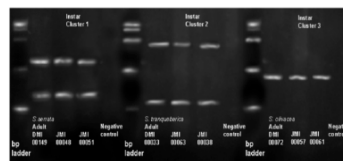


Fig. 1a: *Scylla serrata*



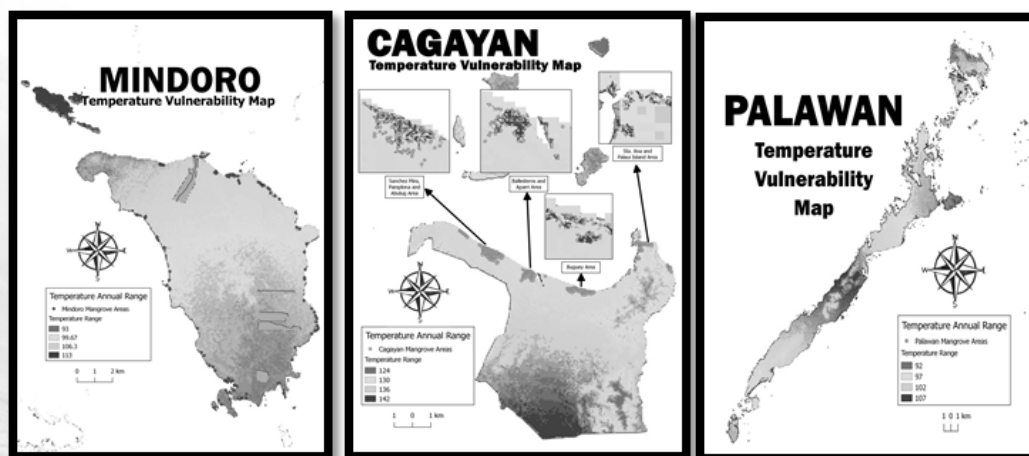
Fig. 1a: *Scytis olivacea*.



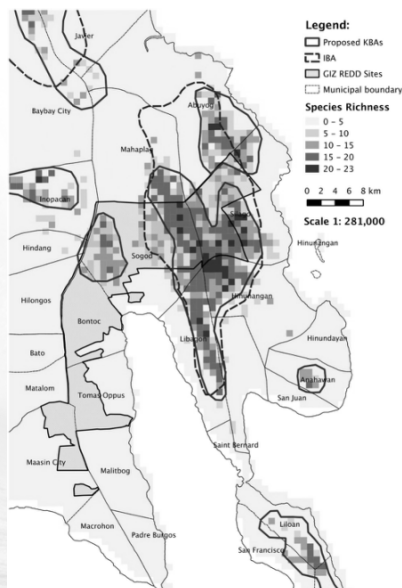
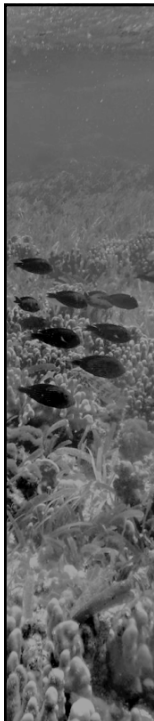
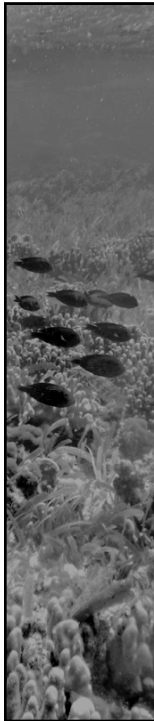
Fig. 1c: *Scylla tranquebari*.



CrabMAP

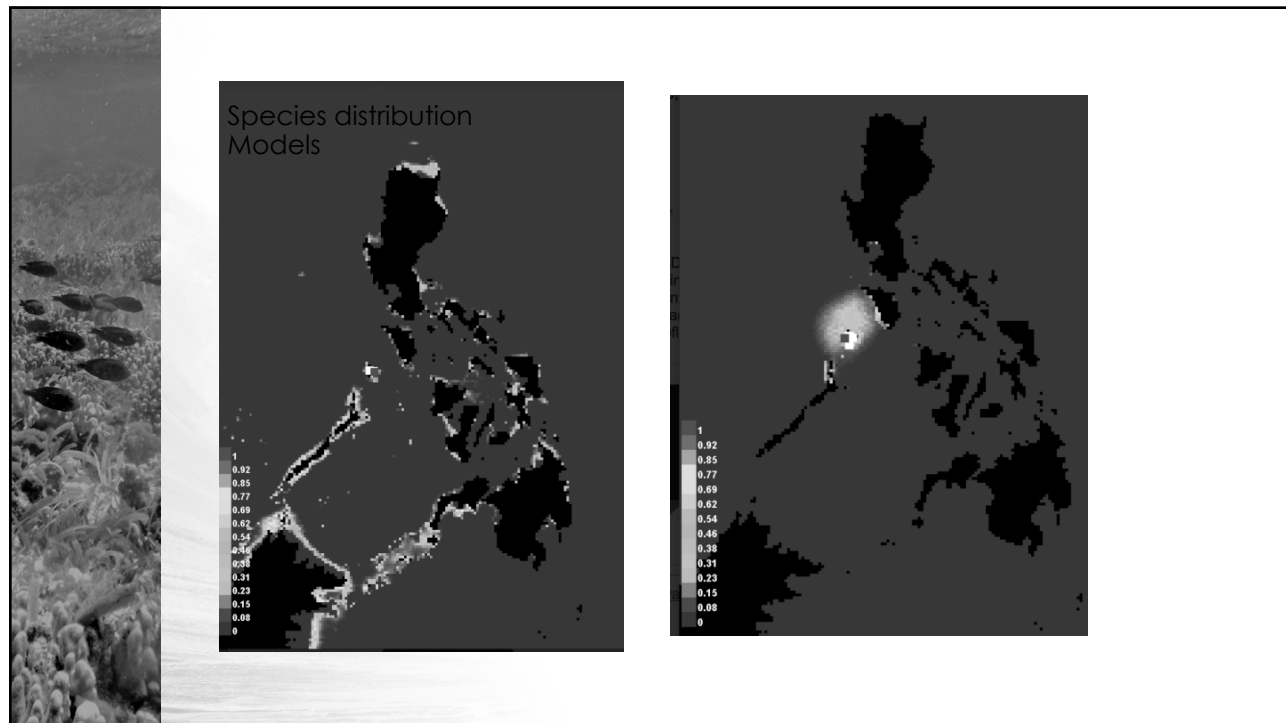


CrabMAP - RNASeq



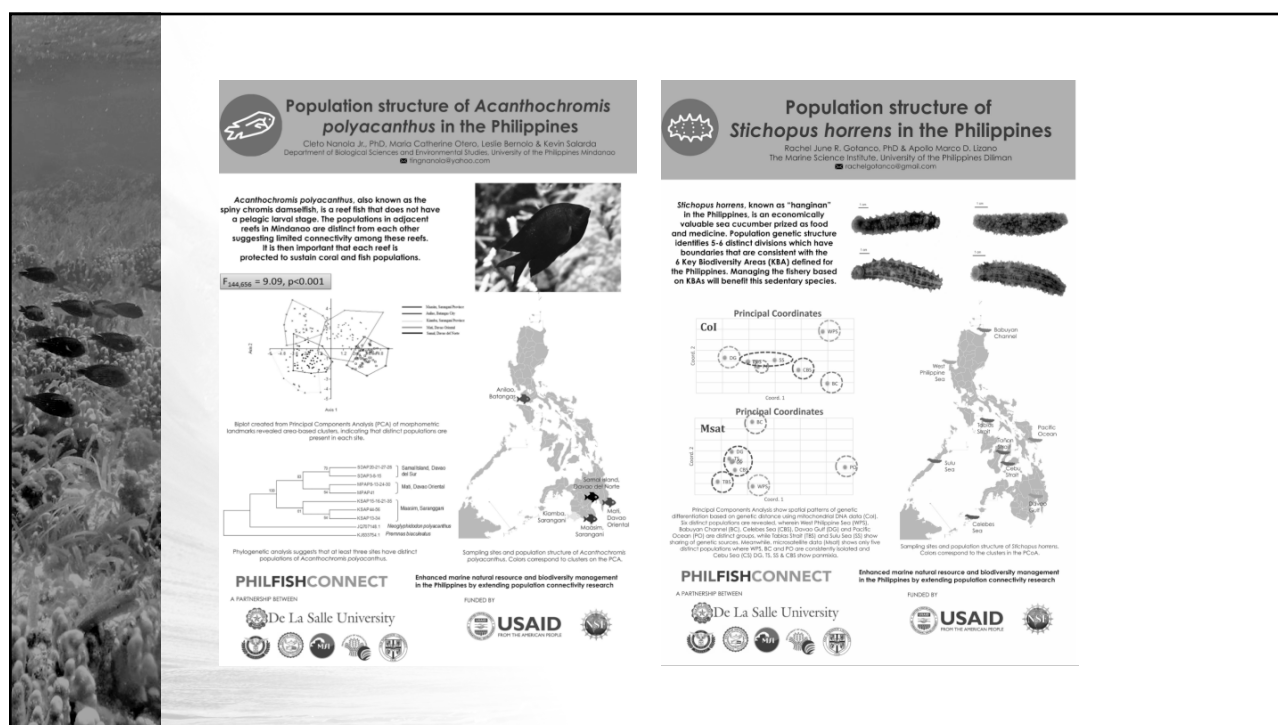
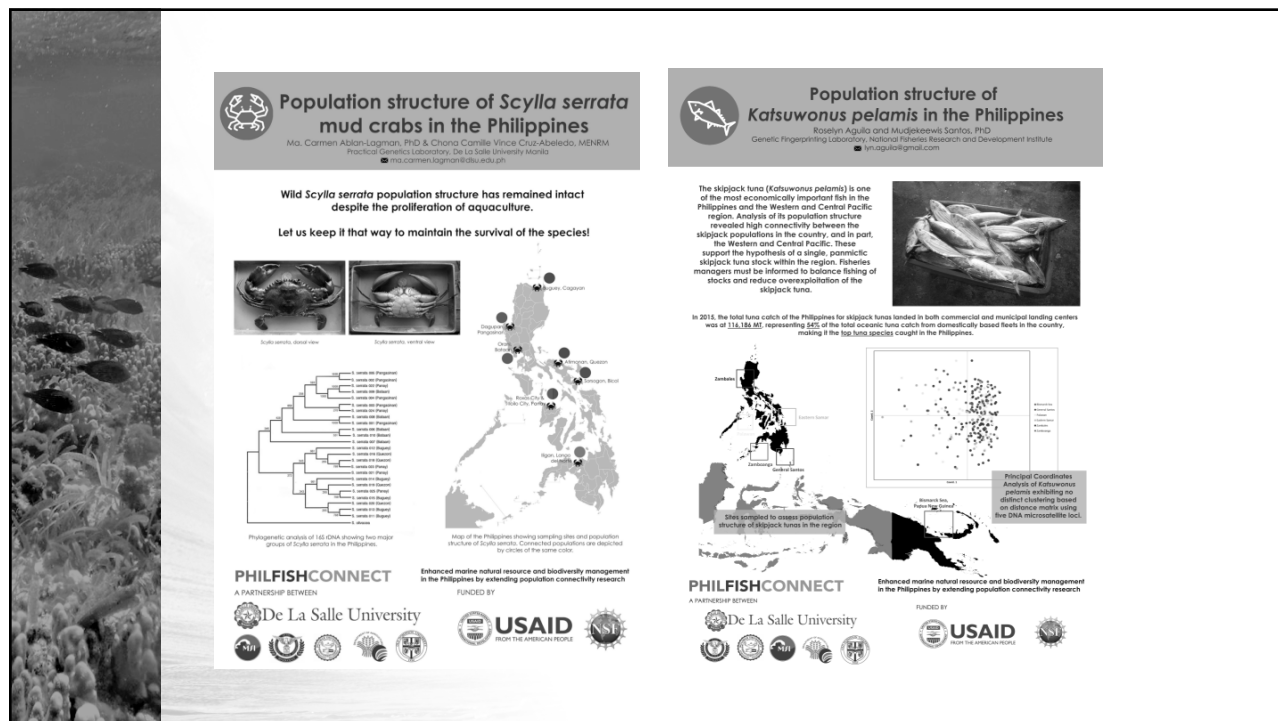
Species
distribution
Models

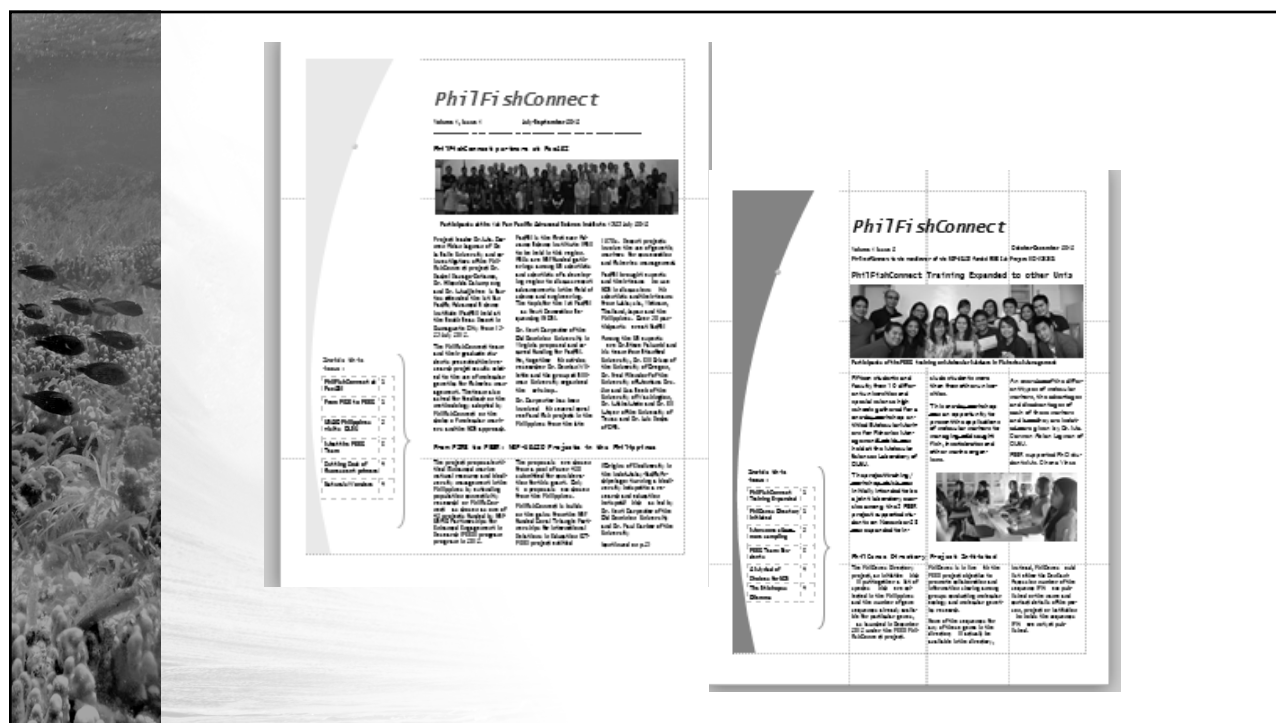
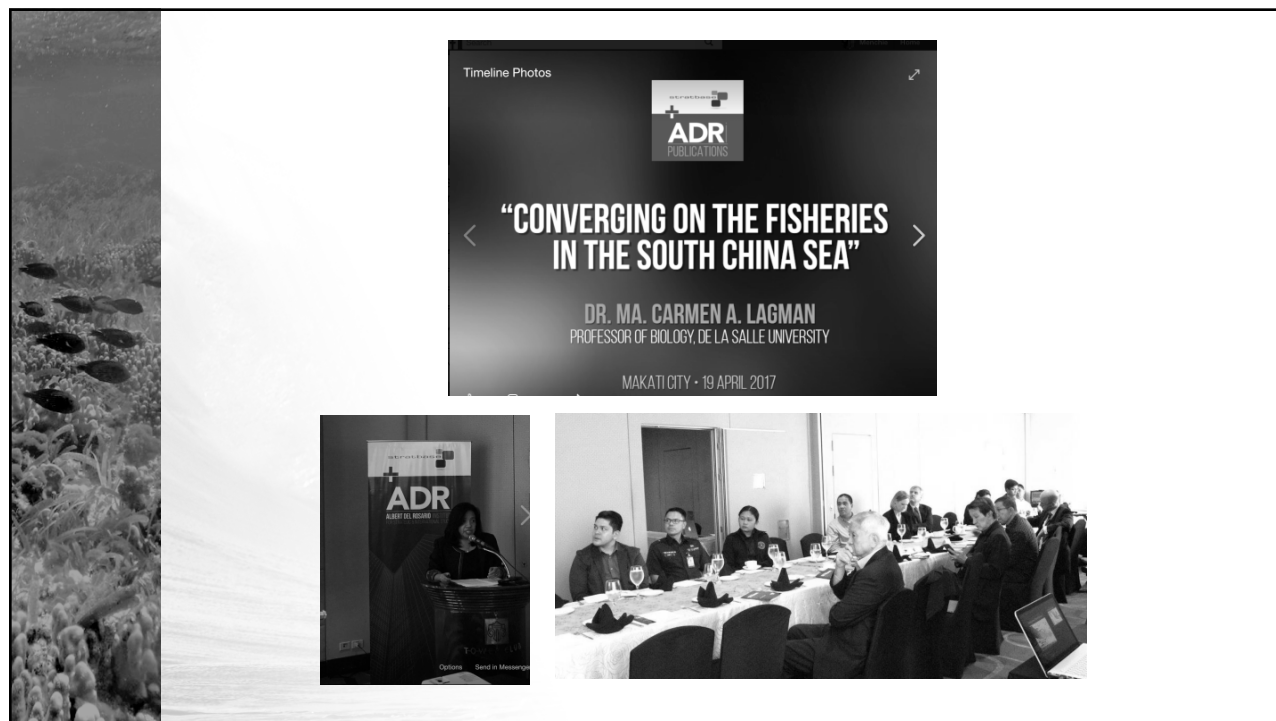
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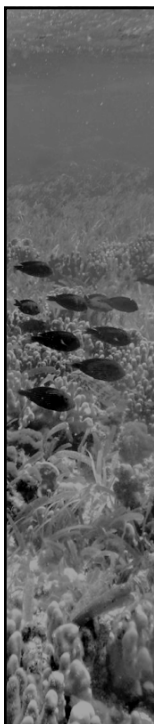


SOLUTION 3: Communication and mentoring to a wide audience

The screenshot shows the PHILFISHCONNECT website. The header includes navigation links: ABOUT, PARTNERS, SPECIES, OUTPUTS, NEWS, and KNOWLEDGE PRODUCTS. The main content area is titled "Outputs" and features a section for "Research findings" under the subheading "Population structures". This section lists several bullet points regarding genetic studies on various fish species. To the right of the text is a map of the Philippines with sampling sites marked. Below the map is the caption "Sampling sites all over the Philippines". Further right, there is a list of species: Skipjack Tuna, Sea Cucumber, Spiny Chromis Damselfish, and Table Coral. Below this is a "PARTNERS" section listing institutions like De La Salle University and the National Fisheries Research and Development Institute. At the bottom, there is a "META" section with links for Log In, Entries RSS, and Comments RSS.

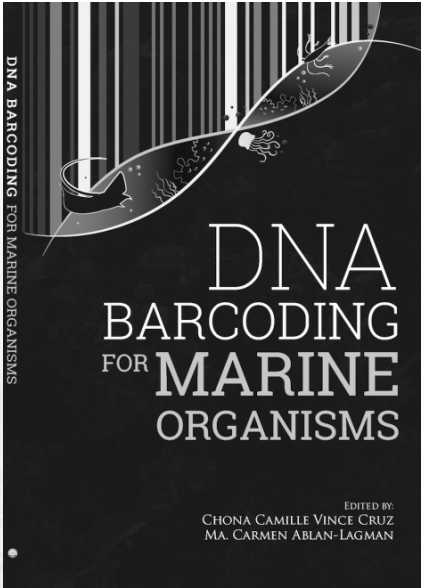
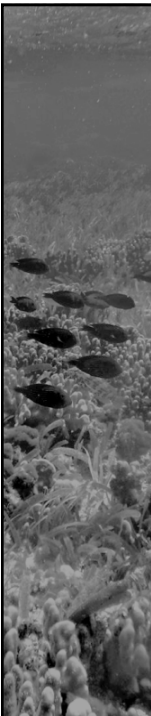








Crowd
sourcing
information



**OpenSource Softwares
for Marine Science**

